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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/804,520	03/12/2001	Kazutomo Hasegawa	FUSA 18.447	1958

26304 7590 08/17/2004

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EXAMINER
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BURD, KEVIN MICHAEL

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 08/17/2004

4

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/804,520

Applicant(s)

HASEGAWA, KAZUTOMO

Examiner

Kevin M. Burd

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Mantri et al (US 6,732,281).

Regarding claims 1, 3, 5 and 6, Mantri discloses a bit allocation method shown in figure 3. A SNR is measured (column 4, lines 51-59) and the bits are allocated for each carrier satisfying the required or requested SNR margin (column 5, lines 37-45). The margin characterizes how close the loaded carrier has come to its theoretical maximum for a given channel and its transmit energy (column 4, lines 56-59). The encoder 108 loads bits onto available carriers by obtaining power from loaded carriers with high SNR margins for the purpose of activating an otherwise unloaded carrier (column 4, lines 2-5). The encoder may exchange power from carrier to carrier by increasing the fine gain adjustment to add power and by decreasing the fine gain adjustment to decrease power (column 4, lines 8-11). Figure 3 shows this method of allocating bits on carriers. Step 300 shows the allocation of bits according to SNR. Step 320 calculates the total surplus power from the loaded carriers. Step 370 discloses allocating a bit to an unloaded

carrier using the power surplus (increasing the gain of the carrier). Figure 3 is described in column 6, lines 1-46). The surplus power is recalculated and the process is repeated (column 6, lines 40-41).

Regarding claim 2, the increase in allocated bits is either 1 bit or 2 bits for the first iteration of the flowchart shown in figure 3.

Regarding claim 4, the allocation of bits to the carriers corresponds to table 1 in column 3. The High margin SNR should be the most efficient and be at a maximum.

Regarding claims 7-9, Mantri discloses a bit allocation apparatus using the method shown in figure 3. A SNR is measured (column 4, lines 51-59) and the bits are allocated for each carrier satisfying the required or requested SNR margin (column 5, lines 37-45). The margin characterizes how close the loaded carrier has come to its theoretical maximum for a given channel and its transmit energy (column 4, lines 56-59). The encoder 108 loads bits onto available carriers by obtaining power from loaded carriers with high SNR margins for the purpose of activating an otherwise unloaded carrier (column 4, lines 2-5). The encoder may exchange power from carrier to carrier by increasing the fine gain adjustment to add power and by decreasing the fine gain adjustment to decrease power (column 4, lines 8-11). Figure 3 shows this method of allocating bits on carriers. Step 300 shows the allocation of bits according to SNR. Step 320 calculates the total surplus power from the loaded carriers. Step 370 discloses allocating a bit to an unloaded carrier using the power surplus (increasing the gain of the carrier). Figure 3 is described in column 6, lines 1-46). The surplus power is

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recalculated and the process is repeated (column 6, lines 40-41). Mantri discloses an allocation table shown in column 3.

### ***Conclusion***

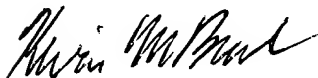
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Subramanian et al (US 2001/0031014) discloses a method of transmitting data. The bits are allocated according to SNR and gain is increased on those channels that are not fully loaded (abstract). Levin (US 5,822,374) discloses a method for allocating bits as described in the abstract, and column 1, lines 42-67).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is 703-308-7034. The examiner can normally be reached on Monday - Thursday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 703-306-3034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin M. Burd  
8/11/2004